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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,297	11/14/2003	Dirk Mueller	SP03-149	2145
22928	7590	05/04/2004	EXAMINER	
CORNING INCORPORATED			HEALY, BRIAN	
SP-TI-3-1			ART UNIT	
CORNING, NY 14831			PAPER NUMBER	
			2874	
DATE MAILED: 05/04/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

10/714,297

Applicant(s)

MUELLER, DIRK

Examiner

Brian M. Healy

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-27 is/are allowed.
- 6) ☒ Claim(s) 1,2,9,10 and 17 is/are rejected.
- 7) ☒ Claim(s) 3-8,11-16 and 18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 04202004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

ALLOWABLE SUBJECT MATTER

Claims 3-8, 11-16 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The closest prior art of record, Ichimura et. al. and Borrelli et. al. are discussed below. Teaches or suggests an optical fiber waveguide that includes a first medium having a low first frequency signal transmission and where illumination of the waveguide by a second frequency signal increases the transmission of the first frequency signal. Also what is not shown or taught is empty chambers formed in the second medium which are filled with fluid or gas (pressurized) forming the first medium which have EIT effects at a coupling frequency. The waveguide also produces dispersion altering characteristics on the first frequency signal, as is stated in claims 3-8, and 11-16. The Boolean operation limitations, as is stated in claim 18 is also not shown or taught by the references of record.

Claims 19-27 are allowed over the prior art of record. The closest prior art of record, U.S.P. No. 6,456,416, Ichimura et. al. and U.S.P. No. 6,260,388, Borrelli et. al. are described below. These references do not teach or suggest the claimed limitations including the method of selecting the transmission of a signal comprising: a fiber including both a photonic band gap structure and exhibiting electromagnetically induced transparency, passing a switching signal through the fiber and selecting the transmission signal by setting the switching signal's frequency to the coupling frequency, as is stated in claims 19-21. Also the references or record do not teach or suggest a method of making an EIT supportive photonic fiber with steps including: extruding, heating/sintering, drawing a glass fiber rod while forming channels, filling

the channels with a medium that exhibits EIT and sealing the channels, as is stated in claims 22-27.

103 REJECTIONS

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,2,9,10, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichimura et. al., U.S.P. No. 6,456,416 in view of Borrelli et. al., U.S.P. No.6,260,388.

Ichimura et. al. 416' teaches (Figs.9-24) an optical waveguide device comprising: optical waveguide sections: including optical fiber sections F1,F2 that is optical connected to an optical waveguide device with photonic crystals 2 having a photonic band gap structure of a second medium which is embedded in glass material of a first medium that also includes a material that exhibits (EIT) electromagnetic induced transparency (See Col. 29, lines 47- 56).

Ichimura et. al.416' does not teach that a photonic band gap structure can be placed inside an optical fiber structure. Borrelli et. al., U.S.P. No.6,260,388 teaches (Figs.1-9) an optical fiber structure 50 that also includes an optical waveguiding section 46,44 that is surrounded by a

plurality of photonic band gap structures that is formed as an optical fiber waveguide for the purpose of propagating selected optical wavelengths.

Both Ichimura et. al. 416' and Borrelli et. al. 388' are from the same field of endeavor, i.e. optical waveguiding devices that also includes photonic bang gap structures, so that the optical fiber structure that includes photonic band gap structures in an optical fiber setting for the purpose of propagating selected optical wavelengths, as is taught by Borrelli et. al. '288, would have been recognized in the pertinent prior art of Ichimura et. al. 416'.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the optical waveguiding section of Ichimura et. al. 416' which includes both photonic band gap structures and EIT structures and form/draw this optical waveguide as an optical fiber waveguide, as is taught by the optical fiber photonic band gap structures, as is taught by Borrelli et. al. 388', for the purpose of propagating selected optical wavelengths.

Any inquiry concerning the merits of this communication should be directed to Examiner BRIAN M. HEALY, Examiner at telephone number (571)272-2347. The Examiner's normal work schedule is Tuesday through Friday, 6:30 AM to 5:00 PM. Any inquiry of a general or clerical nature (i.e. a request for a missing form or paper, etc.) should be directed to the Technology Center 2800 receptionist at telephone number (703) 308-0956, to the technical support staff supervisor (Team 2) at telephone number (703) 308-3072, or to the Technology Center 2800 Customer Service Office at telephone number (703) 306-3329.

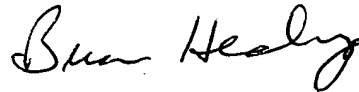
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BRIAN M. HEALY
Primary Patent Examiner
Group Art Unit 2874

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.: Yoo, U.S. Patent Application Publication No. U.S. 2003/0133641A1 (Figs.1-33) and Schmidt et. al., U.S.P. No.6,426,831 (Figs.1-12).

All of the prior art documents submitted by applicant in the Information Disclosure Statement filed on 11/14/2003 have been considered and made of record. Note the attached initialed copy of form PTO-1449.



Brian Healy
Primary Examiner